Research Proposal of the Thesis Entitled

Worldbuilding in Speculative Spatial Design

A toolkit for Critical Design

Submitted by

Deeksha Somaiya

In Partial Fulfilment of the Requirements

for the Degree Of

Doctor of Philosophy

Under the guidance of

Dr. Promil Pande

In the

Unitedworld School of Design

KARNAVATI UNIVERSITY

KARNAVATI UNIVERSITY

GUJARAT- 382422

January 2024

WORLDBUILDING IN SPECULATIVE SPATIAL DESIGN- A TOOLKIT FOR CRITICAL DESIGN

1.1 INTRODUCTION

Designers always think about the future – its possibilities and probabilities. In speculative design projects, a critique on current world and its practices through an imagined preferable future. The most important stage of any speculative project is worldbuilding, which sets the context in which the design exists. There are many worldbuilding techniques that exist in allied fields such as future studies, science fiction, gaming and others, but none specific to spatial speculative design. Hence there is a need for more techniques to generate scenarios for critical design, which is the crux of speculation design.

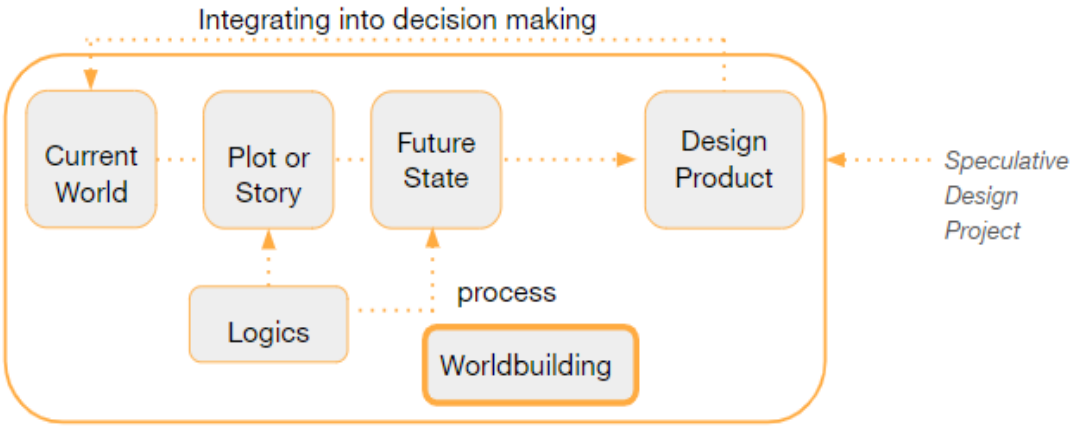

Fig 1 Worldbuilding in the entire Speculative Design Project

The aim of this research is to develop a world-building toolkit that spatial designers could use to imagine radical new futures.

1.2 DEFINING THE RESEARCH PROBLEM

Speculative design is defined as the (future)design concepts of a critical nature. Anthony Dune and Fiona Raby(2013) popularised the phrase “speculative design” as a subset of critical design. Instead commercial considerations in the design proposals, the goal is to identify and discuss significant issues that may arise in the future.

When in “an activity where conjecture is as good as knowledge, where futuristic and alternative scenarios convey ideas, and where the goal is to emphasize the implications of *mindless* decisions for mankind” (Dune et al. 2013). When thinking about the future, the mental image that one visualises and imagines for future can be termed “snapshot

scenarios". These scenarios merely describe future conditions without explaining how they evolved. Compared to novels and films, they need more depth.

On the other hand "Worldbuilding" is a holistic and structured understanding of the system. The more questions of asked of the world, the more details emerge. A well-structured world engages the user with a model of reality that in some sense if different from our world. The narrative and presentation of the worldbuilding helps the audience perceive the other world's reality.

The imagined world becomes the foundation, the context and even the concept for the design. Hence, it needs robust grounded methods. The details of how things work become the building blocks for the design process. Thus worldbuilding in design starts to differentiate between design and its allied fields. Taking an example, in the gaming world, the world is limited to the experience of the user but in design it could lead to a commentary on policies. Therefore, there is a need to develop worldbuilding methods specific to speculative spatial design.

1.3 RESEARCH OBJECTIVES

The main objectives of the research are-

RO1 To study the role of worldbuilding in the speculative design process

RO2 To compare various worldbuilding techniques in allied fields

RO3 To develop a framework/toolkit for worldbuilding in the design process

RO4 To assess the validity of worldbuilding technique to foster critical design

1.4 RESEARCH QUESTIONS

Each of the above objectives led to a series of following research questions.

RO1 To study the role of worldbuilding in the speculative design process

RQ 1.1 What is a Speculative Spatial Design Process?

RQ 1.2 What is Worldbuilding in Speculative Design Process?

RO2 To compare various worldbuilding techniques in allied fields

RQ 2.1 What are the fields that employ world-building techniques?

RQ 2.2 What are the tools for analyzing techniques?

RO3 To develop a framework/toolkit for worldbuilding in the design process

RQ 3.1 How is worldbuilding employed in current practices?

RQ 3.2 What are the key challenges faced by practitioners?

RO4 To assess the validity of worldbuilding technique to foster critical design

RQ 4.1 What role does worldbuilding help in foster critical design?

RQ 4.2 How does worldbuilding for Speculative Spatial design foster critical design?

1.5 IMPORTANCE OF RESEARCH TOPIC

This section implores the importance of integrating futures studies in design, and how it contributes to the overall development of the field.

1.5.1 Implications for current planning

Current planning may be redundant if its implication in the future is not taken in account. Designers of today need to understand that their assumptions could have large scale impacts in society. A preferable future could be designed with thoughtful interventions. There are innumerable possibilities of the future due to the exponential growth of society.

1.5.2 Enhancing Design Creativity and Innovation

Breaking constraints of the real-world problems, it gives designer immense power to imagine radically different realities. The immersive and innovative worlds could lead to freedom and creativity.

1.5.3 Interdisciplinary Insights

Worldbuilding has rich roots in literature and cinema, using storytelling to potray rich narratives. Futures studies, has transitioned its role and diversified into multiple fields. Integrating both into design, could strengthen and yet generate new insights in the worldbuilding process.

1.5.4 Improved Design Education

Design educators currently borrow tools from allied fields, since there is dearth of techniques in the field. Developing a toolkit specific for designers, could aid in simpler application as per intended purposes.

1.5.5Critical Design Thinking

The main intent of SD projects is to encourage provocation and critical examine design and consequently society at large. Integrating this undercurrent of criticality in the toolkit will help designers not waiver into the vagueness of the speculation.

Enhancing Design Creativity and Innovation
Interdisciplinary Insight
Improved Design Education
Critical Design Thinking
"If we don't think about alternatives, we are stuck with what we are doing now"

Fig 2 Importance of research

1.6 LITERATURE REVIEW

The literature review was conducted in a thematic manner, which helped identify gaps in existing body of knowledge and also justifying the need for the research. The themes for the literature review correspond to each of the research question.

RO 1
To study the role of worldbuilding in SSD process
1.1 What is a SSD ?
1.2 What is Worldbuilding in SD Process ?
RO 2
To compare various WB techniques in allied fields
2.1 What are the fields that employ wb techniques?
2.2 What are the tools for comparing techniques ?
RO 3
To develop a framework/toolkit for WB in SSD
3.1 How is WB employed in current practices ?
3.2 What are the key challenges faced by practitioners?
RO 4
To assess the validity of WB technique to foster CD
4.1 What role does worldbuilding help in foster CD?
4.2 How does worldbuilding for SSD foster CD?
1. Evolving Role of Design
2. Speculative Design (SD)
3. Spatial Design
4. Speculative Spatial Design (SSD)
5. Worldbuilding in SD Process
6. Worldbuilding in other fields
7. Analysing Techniques
8. Worldbuilding-Practices & challenges
9. Critical Design
10. Critical Design in SD Process
11. Design Research Methodology
7

Fig 3 Literature Review themes from Research Questions

There has been a notable shift in the role of design in the existing body of literature as elucidated by Muratovski (2015). Design is evolving from merely solving problems to actively identifying them, thus adding value across various sectors. Furthermore, it is progressively adopting a multidisciplinary approach and functioning as a catalyst for social change. Press and Cooper(2017) emphaisize the evolving nature of design in the 21st century. They also assert that it has yet to fully realize its potential as a forward thinking and responsible agent of change, as promised in the inception of the field.

To address the intricate and demanding issues of the 21st century, Irwin(2018) advocates for a novel approach centred around design. This transition design approach encompasses a three-phase framework that includes envisioning transitions, developing theories of change, and adopting a mindset and posture conducive to design interventions. Despite being the early stages, this approach is considered an integral part of future-oriented design studies.

Koskelo and Nousiainen (2019) propose integrating futures thinking into service design to generate comparable, alternative, and actionable solutions. They emphasize the inclusive nature of futures design processes, which utilize methods beyond observations and insights.

Meanwhile, Taylor et al (2013) discuss the evolving role of designers in response to the changing nature of work, emphasizing the significance of exploring speculative design within design education. Evans (2010) examines how designers engage with the future during the design process and developed a Design Futures Framework- which communicates the representative picture. This framework draws parallels with the concept of worldbuilding from future studies, and compares it to the concept and context stage of the design process.

Exner (2020) and Perolini (2014) explore spatial design, aiming to define spatial design, since not much literature exists. Perolini investigates the concept of interiority and spatial volumes, which is currently limited in theories of interior design. By critiquing current architectural practices Andreea Cutieru (2020) emphasizes the necessity of envisioning beyond physical spaces. Narratives that guide operations in society are crucial for the development of the field. Clear(2009) suggested that we may be able to imagine a better future, by re-evaluating the purpose of architecture and its intended audience.

Speculative Spatial Design (SSD) was defined by Barton (2022) sets visionary architecture as a tool for driving change. She also highlights the scarcity of research in the field. Plowright (2020) uses reflective tools such as scenario for space and society. Young (2022) advocates architects and spatial designers as modern worldbuilders. Auger (2013) discusses the strategies employed by designers to ground their design fiction in reality. He highlights that these techniques exist in other disciplines and are applied in speculative projects in the field of product design. Vistisen (2021) has developed a design fiction matrix for speculation product design- a synergy between past, futures, fact and fiction. Coulton(2017) explore design fiction as a means of worldbuilding, offering reflective tools for the spatial design process. Zaidi(2019) introduces a seven layer model for worldbuilding that is specific to spatial design.

Wolf(2017) and Schultz(2015) explore worldbuilding in literature and plausible futures, providing valuable insights that are applicable to the field of design. Wong and Nguyen(2021) study worldbuilding in the context of social studies, emphasizing the significance of value systems in human-computer interaction. The existing body of literature concerning speculative design brings attention to the necessity of employing spatial design-specific techniques Auger (2013), Vistisen(2021), Coulton et al. (2017), and Zaidi(2019). The broader implication if speculative design, including its impact on education(Helgason et al, 2021), worldbuilding (Wolf 2020) and discourse (Gavins and Lahey,2016) to further emphasize its significance.

Loewe(2019) and Bardzell (2013) discuss critical design thinking, acknowledging its lack of practical support. Rendell(2008) evaluates spatial design practices and highlights the absence of criticality in spatial studies. Dunne and Raby (2013) redefine design thinking by stressing the importance of connection, debate and speculation rather than solely focusing on product sales. Stepanovic and Ferraro (2021) employ design fiction as a catalyst for critical thinking, utilizing various perspectives to explore the purpose of speculative design projects. Ekman and Taylor(2016), Johannessen et al(2019) and Auger(2013) delve into the

dynamic interplay of futuring methods and worldbuilding techniques in speculative design. The literature also delves into research methodologies, emphasizing the requirement for guidelines in interdisciplinary research by Tobi & Kampen(2018) and design experiments by Mettler et al (2014) Barab (2014) and Petermans et al. (2018) concentrate on design-based research and research in interior architecture.

1.7 1.7 RESEARCH METHODOLOGY

The research process is divided into two distinct phases: the exploratory phase and the Research Through Design (RtD) phase. The exploratory phase is deemed necessary due to the nascent stage of the subject under investigation. On the other hand, the Research Through Design phase allows meticulous analysis of both the design output and the worldbuilding process.

1.7.1 Phase 1 Exploratory Phase

The initial stage of the research is characterized by an exploratory phase, deemed essential due to the nascent nature of the subject. Using primary and secondary approach, a better understanding of worldbuilding in speculative spatial design(SSD).

Secondary Data Collection
Case studies of SD projects to understand the worldbuilding processes used and its implication on the final design. A total of 45 projects, spread across various design disciplines.

Product design – 15 projects

Spatial design – 15 projects

Game design – 15 Projects

Primary Data Collection
Interviews and Questionnaire to gain insights into the worldbuilding practices in the SD community. A cohort of academicians, artists, designers and researchers will be included in sample size of 100 practitioners. A focused group interview of 20 people from the sample, for in-depth analysis.

1.7.2 Phase 2 Research through Design

Exploratory phase of the research will give scope for experimenting and gaining insights through it. It will be a crucial step to highlight the gaps of existing worldbuilding practices in SSD. The findings of experiments will become aids for the second phase of Research through Design(RtD).

Experiment 1: Worldbuilding Techniques in Design Projects
Studying 20-30 design projects to evaluate the application of worldbuilding techniques. This step provides critical insights into the effectiveness and impact of various methods in shaping design outcomes.

Experiment 2: Integration of Worldbuilding Techniques from Allied Fields
Investigating the infusion of worldbuilding techniques from allied fields into design projects. A comprehensive review of literature (5 techniques), movies (5 techniques), and futures studies (5 techniques) contributes to a broader understanding of the versatility and adaptability of worldbuilding in SSD.

Experiment 3: Iterative Development of a Specialized Worldbuilding Toolkit for SSD
Identifying shortcomings and challenges from the previous tests to inform the design of a tailored Worldbuilding Toolkit for SSD. This toolkit is applied in practical design scenarios, and outcomes are systematically analysed. The iterative process allows continuous refinement, ensuring the toolkit evolves in response to practical insights.

This two-phase approach ensures a holistic journey from exploration to active participation in shaping the field of worldbuilding in speculative spatial design. The exploratory phase provides foundational knowledge, while the RtD phase not only analyses current practices but actively contributes to the development and refinement of a specialized toolkit for worldbuilding in SSD.

1.8 ANALYSIS OF INFORMATION

1.8.1 Analysing Phase 1 Data

Questionnaire Responses
The questionnaire will comprise responses in the format of a Likert scale, where some questions can be combined into single composite/variable. The data can then be analysed through central tendency- means and standard deviation.

Focused Group Interviews
After transcribing and organising a deductive analysis - to find common patterns in data. This would be crucial to understand the shortcomings of the worldbuilding practices currently employed by designers.

Case Studies
Each of the projects would be understood at 2 levels- as holistic design project and the comparison to other projects. In each project the intention would be understand the worldbuilding technique used, the success of the design outcome/purpose. The success of the outcome could be analysed through the lens of immersion, for the audience the project was intended for.

For the comparative analysis, similarities and difference to approaches will be studied in depth.

1.8.2 Analysing Data from Phase 2

Experiment 1
The outcome from Experiment 1 will be evaluated considering the impact of worldbuilding techniques on design outcomes. Certain qualitative measures such as innovation, user engagement and criticality will be assessed for effectiveness.

Experiment 2
Identifying strengths, weakness and unique contributions of each approach borrowed from fields of literature, movies and future studies into design projects.

Experiment 3
The practical application of the toolkit will be assessed to identify challenges and how the toolkit contributes to enhancing the design process. Feedback from users will be crucial to test its application. The toolkit will be evaluated in its effectiveness in the two parameters. Validity – Does the developed toolkit aid in fostering critical design of speculative projects? Usability – Is the toolkit user friendly in terms of application, clarity of instructions and overall user experience?

1.9 LIMITATIONS AND KEY ASSUMPTIONS

1.9.1 Generalisation

The study focuses on Spatial design; hence the developed toolkit may be unserviceable for other disciplines of design. The findings from the data will not have larger overall applicability.

1.9.2 Limited Literature

As a new developing field of study, there is not enough concrete theories that are available as sources of data. Due to the evolving nature of the field, a historical development of worldbuilding techniques might not be possible.

1.9.3 Sample Selection

The selection of projects for case study at phase 1 Secondary Data Collection, may be chosen in terms of information that can be accessed. They might not be representative of the entire spectrum of SSD projects.

1.9.4 Practitioner Subjectivity

Like design, SSD projects depend solely on the designer with not a singular correct method. This may lead to subjective interpretations based on personal views.

1.9.5 Interdisciplinary Challenges

The inclusion of techniques from literature, movies and futures studies might incur challenges of interdisciplinary integration. A difference in foundational principles might not position techniques in the design context.

REFERENCES AND BIBLIOGRAPHY

1. Andreea. C. (2020) "Speculative Architecture: Where are the Contemporary Equivalents of the 60s and 70s Radical Visions?" 22 Nov 2020. *ArchDaily*. Accessed 30 Nov 2023, https://www.archdaily.com/951803/speculative-architecture-where-are-the-contemporary-equivalents-of-the-60s-and-70s-radical-visions

2. Auger, J. (2013). Speculative design: crafting the speculation. Digital Creativity, 24(1), 11-35.

3. Barab, S. (2014). Design-based research: A methodological toolkit for engineering change

4. Bardzell, J., & Bardzell, S. (2013, April). What is" critical" about critical design?

5. Barton, G. (Ed.). (2022). Design Studio Vol. 5: Experimental Realism:(Design) Fictions and Futures. Routledge.

6. Baumer, E. P., Blythe, M., & Tanenbaum, T. J. (2020, July). Evaluating design fiction: The right tool for the job

7. Clear, N. (2009). Architectures of the near future. Wiley.

8. Coulton, P., Lindley, J. G., Sturdee, M., & Stead, M. (2017). Design fiction as world building

9. Coulton, P., Lindley, J., & Akmal, H. A. (2016). Design Fiction: Does the search for plausibility lead to deception?

10. Dunne, A., & Raby, F. (2013). Speculative everything: design, fiction, and social dreaming. MIT press

11. Ekman, S., & Taylor, A. I. (2016). Notes toward a critical approach to worlds and world-building

12. Evans, M. (2010). Design futures: an investigation into the role of futures thinking in design. Lancaster University (United Kingdom).

13. Exner, U. (2020). Basics Spatial Design. Birkhäuser.

14. Gavins, J., & Lahey, E. (Eds.). (2016). World building: Discourse in the mind. Bloomsbury Publishing.

15. Helgason, I., Hanna, J., Auger, J., Encinas, E., & Smyth, M. (2021). Speculative Design in Education: Mapping the Landscape.

16. Irwin, Terry. (2018). The Emerging Transition Design Approach. 10.21606/dma.2017.210.

17. Johannessen, L. K., Keitsch, M. M., & Pettersen, I. N. (2019, July). Speculative and critical design—features, methods, and practices

18. Koskelo, M., & Nousiainen, A. (2019). Futures Design - Why design needs futures? Service Innovation and Design - Stories of the Emerging Themes and Impact of the Education.

19. Kozubaev, S., Elsden, C., Howell, N., Søndergaard, M. L. J., Merrill, N., Schulte, B., & Wong, R. Y. (2020, April). Expanding modes of reflection in design futuring

20. Lindley, J., & Green, D. P. (2022). The ultimate measure of success for speculative design is to Disappear completely.

21. Loewe, S. (2019). Toward a critical design thinking: Propositions to rewrite the design thinking process. Dialectic, 2(2).

22. Mettler, T., Eurich, M., & Winter, R. (2014). On the use of experiments in design science research: a proposition of an evaluation framework.

23. Muratovski, Gjoko. (2015). Paradigm Shift: The New Role of Design in Business and Society. She Ji:

24. Perolini, P. (2014). Interior environments: The space of interiority. Zoontechnica: The Journal of Redirective Design,(3), 1-5.

25. Petermans, A., Vanrie, J., & Pint, K. (2018). Research in Interior Architecture: Interdisciplinary Viewpoints and Research Approaches

26. Plowright, P. D. Design fiction and architecture.

27. Press, M., & Cooper, R. (2017). The design experience: the role of design and designers in the twenty-first century. Routledge.

28. Rendell, J. (2008). Critical spatial practice. Art Incorporated.

29. Schultz, W. (2015). Manoa: the future is not binary. APF Compass, 4, 4-8.

30. Stepanovic, M., & Ferraro, V. (2021). Disruptive technologies and behavioural change: Design fiction as trigger for critical thinking.

31. Taylor, D., Peralta, C., Kermik, J Designing Design Futures

32. Tobi, H., & Kampen, J. K. (2018). Research design: the methodology for interdisciplinary research framework. Quality & quantity

33. Vistisen, P. (2021). The design fiction matrix—a synthesis tool for grounding fiction scenarios in real facts.

34. Voros, J. (2003). A generic foresight process framework. foresight, 5(3), 10-21.

35. Wolf, M. J. (2017). World design. In The Routledge companion to imaginary worlds (pp. 67-73). Routledge

36. Wolf, M. J. (Ed.). (2020). World-Builders on world-building: An exploration of subcreation. Routledge.

37. Wong, R. Y., & Nguyen, T. (2021, May). Timelines: A world-building activity for values advocacy.

38. Young, L. (2022). In Other Worlds: Cities Shaped Like Fiction. In Design Studio Vol. 5: Experimental Realism (pp. 1-11). RIBA Publishing.

39. Zaidi, L. (2019) Building Brave New Worlds.

…… ……

Signature of Scholar

Deeksha Somaiya

Signature Of Supervisor

Dr. Promil Pande